

Date: Tue, 16 Mar 93 19:34:09 PST  
From: Info-Hams Mailing List and Newsgroup <info-hams@ucsd.edu>  
Errors-To: Info-Hams-Errors@UCSD.Edu  
Reply-To: Info-Hams@UCSD.Edu  
Precedence: Bulk  
Subject: Info-Hams Digest V93 #332  
To: Info-Hams

Info-Hams Digest                      Tue, 16 Mar 93                      Volume 93 : Issue    332

Today's Topics:

        Cleaning Air Variable Caps.  
        Dayton Hamvention Information  
        Definition sought: FAB  
        Generic question on J-poles  
Help wanted building Fixed-Frequency CHU reciever.  
        HTX-202 MODS ??????  
        MACSOFTWARE??????????  
Newbie question: What is iambic?  
        Repair my HW-101??  
        Washing Radios? (2 msgs)  
What about those FAQing number stations anyway?  
        Yaesu FT-530 vs. TH-28A

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>  
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.  
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Date: Tue, 16 Mar 1993 19:40:56 GMT  
From: usc!sdd.hp.com!hpscit.sc.hp.com!hplextra!hpl-opus!hpnmdla!  
alanb@network.UCSD.EDU  
Subject: Cleaning Air Variable Caps.  
To: info-hams@ucsd.edu

In rec.radio.amateur.misc, nat@kpc.com (Natarajan Gurumoorthy) writes:

>One of the caps I picked up is a differential cap (2 sections of the same  
>size with the rotor being the common terminal to the 2 caps). Any idea why it is  
>called a differential cap? I was thinking of building a transmatch with it. The

>circuit I was thiking of was the following

>           section 1           section 2 of diff cap

```
>       -----| |-----| |-----
>                   |
>                   |
> transmitter   inductor           antenna
>                   |
>                   |
>                   |
>                   -----
>                   ---
>                   -
```

>Most of the commercially avaiable transmatches seem to have 3 degrees of  
>freedom, while the above circuit has only 2.

The inductor needs to be variable too. Also a true differential capacitor has the two halves in opposite phase -- that is, when one section is at max capacitance, the other is at min. This is also what you need to make the above circuit work.

AL N1AL

-----  
Date: 17 Mar 93 01:18:04 GMT  
From: usc!zaphod.mps.ohio-state.edu!uwm.edu!msuinfo!netnews.upenn.edu!  
eniac.seas.upenn.edu!depolo@network.UCSD.EDU  
Subject: Dayton Hamvention Information  
To: info-hams@ucsd.edu

In article <1993Mar16.185802.6546@netnews.louisville.edu>  
harpe@netnews.louisville.edu (Mike Harpe) writes:  
>I'm curious. Last year after Dayton it was widely reported that last year  
>was the last year for Dayton at Hara Arena. Now i'm seeing that it's still  
>there. What's the deal?

I believe they signed a three-year renewel at Hara according to what I  
remember hearing on Newsline last week.

Were any Usenet frequencities posted here this year for Dayton that I missed?  
The last time I went to Dayton I never found anyone on the suggested  
freqs.

--- Jeff

--

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Jeff DePolo WN3A Twisted Pair: (215) 337-7383H 387-3059W  
depolo@eniach.seas.upenn.edu RF: 443.800+ MHz 442.700+ MHz 24.150 GHz  
University of Pennsylvania  
-----

Date: Wednesday, 17 Mar 1993 00:39:24 CET  
From: usc!howland.reston.ans.net!spool.mu.edu!yale.edu!ira.uka.de!gmd.de!dearn!  
esoc!kchan@network.UCSD.EDU  
Subject: Definition sought: FAB  
To: info-hams@ucsd.edu

FAB == Fabulous (meaning marvellous, all OK, etc etc)

It was a rather "in" word in the 60's, c.f. the Fab-4 == the Beatles  
(disclaimer - I am not really old enough to be a big fan of the Beatles).

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Khee Chan  
BITNET/EARN: kchan@esoc, kchan@caltech SPAN: jplsp::kchan  
INTERNET: kchan@jplsp.jpl.nasa.gov, kchan@caltech.edu  
I speak for no-one, and no-one speaks for me. Sometimes not even myself!

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Date: 16 Mar 93 19:27:52 GMT  
From: news-mail-gateway@ucsd.edu  
Subject: Generic question on J-poles  
To: info-hams@ucsd.edu

>  
> Speaking of J-poles...  
>.....  
> Anyway, what experiences have folks had with them? I'm wondering what kind of  
> good and bad characteristics anyone might have to report.  
>.....  
> Last January I visited my old club back home, and they were planning a "J-pole  
> Party" at a future meeting. They build them with 1/2" copper tubing so they  
> are pretty sturdy.  
>

Around here, J-POLES are very popular, particularly the 1/2" copper tubing  
type. Several friends made them, and had very good luck with them. I first  
tried to make the 300 ohm twin-lead variety, but got very poor results. I  
have now made about 4 of these, and the best was only marginally better than  
a rubber duck, if it all. I then (I don't like doing what everyone else does)

tried making one out of brazing rods, and this one actually worked fairly well, except that the rods were so flexible that the spacing between the  $1/4$  wl and  $1/2$  wl sections changed as it flexed in the wind. I then used strips of plexiglas between these 2 sections for stabilization, which helped a lot, but the  $1/2$  wl section was still so flexible that when a bird would land on it it would bend. Finally, I resorted to the  $1/2$ " tubing variety, and it worked the first time, and has worked perfectly ever since. I would now like to make another, except I have lost the dimensions. I guess I'll have to bring down the original, and measure it. If I remember, though, the long section is approximately 58", and the short section about 18.5-19", and there is about 3" {I think that this is a center to center measurement, } spacing between them. The sections are connected with a "T" and 90 deg elbow. Any left over tubing can be added to the bottom of the "T" as a mast connection, and can be grounded. The COAX connection is approximately 3" up from the bottom, but can be much more if the dimensions are different. I previously asked here whether anyone knew how to scale the dimensions for various sized tubing. An old timer told me to use the chart in the handbook which relates center to center spacing to characteristic impedance, and find where the curve crosses 300 ohms. This gives the 3" spacing for  $1/2$ " tubing, and seemed to work with the brazing rod antenna I made, and obviously is consistent with the twin-lead variety, but why 300 ohms? As for the other dimensions, the lengths seem to approach  $1/4$  wl and  $1/2$  wl with the larger tubing, and are significantly shorter with the smaller diameters. ?Is this related to the velocity factors in the matching section?

Anyway, in addition to working at 2-meters, this J-POLE works very well in the 70 cm band. I have been trying to make a 2-meter beam out of random materials I have available, and have not been having much luck. A friend suggested that since I had been so sucessful with the J-POLE, that I just take the J-pole and add a few additional elements as reflector and directors! Has anyone tried this? Does it make sense to make these additional elements just  $1/2$  wl, and locate them opposite the top open section of the antenna, or would it be better to make them the full  $3/4$  wl, or something else?

BTW, the brazing rod antenna was made by drilling 2 holes the size of the brazing rods in a  $3/8$ " rod, spaced somewhere around  $3/4$ " to  $5/4$ ", depending on the diameter of the brazing rods. The rods were secured by set screws in tapped holes drilled in from the ends of the  $3/8$ " rod. The assembly was strengthened with plexiglas and attached to a 1" wooden dowel that was cut in half lengthwise for about the top 10"'s of it's length. Works pretty well for a temporary antenna, but isn't strong enough for premanent installation. Perhaps if mounted inside PVC tubing?

Date: Tue, 16 Mar 1993 19:46:20 GMT  
From: usc!sdd.hp.com!hpscit.sc.hp.com!hplextra!hpl-opus!hpnmdla!  
alanb@network.UCSD.EDU  
Subject: Help wanted building Fixed-Frequency CHU reciever.  
To: info-hams@ucsd.edu

In rec.radio.amateur.misc, robert@lunatix.uucp (Robert Sexton) writes:

>Can anybody out there point me to a source for a schematic?  
>For those who may not be familiar, CHU is the Canadian time  
>standard. Its transmittted on 3330 kHz, 7335 kHz, and 14670 kHz.  
>it transmitted in A3H mode (a form of single sideband, I am told)

It does transmit with full carrier, so you can receive it on a standard  
AM receiver. Now that you mention it though, I think I have noticed  
that one of the sidebands is missing.

AL N1AL

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Date: 17 Mar 93 00:15:45 GMT  
From: munnari.oz.au!metro!mippet.ci.com.au!eram!dave@network.UCSD.EDU  
Subject: HTX-202 MODS ??????  
To: info-hams@ucsd.edu

In article <9303152100.AA03759@netmail.microsoft.com>,  
a-kevinp@microsoft.COM (Kevin Purcell, Rho) writes:

| For american use 146.52 would be nice (but this would be out  
| of band in other parts of the world -- is it sold in UK, Australia, NZ,  
| Europe?).

Haven't seen 'em here, and they've never heard of 'em. Then again, they're  
a bit of a "toy shop" in this part of the world.

--  
Dave Horsfall (VK2KFU)      VK2KFU @ VK2RWI.NSW.AUS.OC      PGP 2.1  
dave@esi.COM.AU            ...munari!esi.COM.AU!dave      available

-----  
Date: 17 Mar 93 00:43:05 GMT  
From: usc!wupost!emory!logicse!henson!news.u.washington.edu!raven.alaska.edu!  
aurora.alaska.edu!fsrla@network.UCSD.EDU  
Subject: MACSOFTWARE?????????  
To: info-hams@ucsd.edu

Howdy, I'm working on getting a No-Code Tech liscense  
and I was wondering, is there any Macintosh software  
out there (preferbly shareware) that I can use to help  
learn the technical aspects.  
Also, is there a program out there that I can use to learn  
the code ('cause eventually I will NEED it)????????  
Any help is much appriciated!!!!

Please e-mail any replies to FSRLA@ACAD3.ALASKA.EDU

THANKS AGAIN!!!  
ROGER ASBURY

-----  
Date: Wed, 17 Mar 1993 01:19:34 GMT  
From: sdd.hp.com!hpscit.sc.hp.com!icon.rose.hp.com!greg@network.UCSD.EDU  
Subject: Newbie question: What is iambic?  
To: info-hams@ucsd.edu

So how does one go about learning how to use one of these things? I'd like  
to play with CW, and would probably benefit in the long run from \*not\* learning  
on a straight key (and have to unlearn it). Is there a general preference for  
using a keyer (how many kinds are there?), or do most folks just stick with  
the original telegraph-style key? OR, is this a question like "what's the  
best text editor"?

Greg KD6KGW

-----  
Date: 17 Mar 93 01:12:08 GMT  
From: usc!zaphod.mps.ohio-state.edu!swrinde!emory!logicse!sequent!  
muncher.sequent.com!edw@network.UCSD.EDU  
Subject: Repair my HW-101??  
To: info-hams@ucsd.edu

In article <21870022@hplvec.LVLD.HP.COM> bagdy@hplvec.LVLD.HP.COM (Mark Bagdy)  
writes:

>I would like to know your opinion of fixing up my old HW-101.

I'm on the air regularly  
D104 -> HW101 -> SB200 -> UT2000 -> 6BT  
The old stuff works fine.  
Every so ofetn someone will say " Gee whiz we are all 28.340, and  
I noticed that you are on 28.3999574638290 , could you come up a  
to freq ?"

And I usually reply politely that my calibration isn't quite that fine.  
And under my breath think that if all we have to do is fuss over someone  
being off a kc or less, well llllllllllllll oh well.

Ed

--

-- I think I've got the hang of it now .... :w :q :wq :wq! ^d X exit ^X^C ~.  
^[x X Q :quitbye CtrlAltDel ~~q :~q logout save/quit :!QUIT ^[zz ^[ZZ  
ZZZZ ^H ^@ ^L ^[c \$q ^# ^E ^X ^I ^T ? help helpquit ^D ^d ^C ^c help  
^]q exit ?Quit ?q anybackbone!sequent!edw edw@sequent.COM KA9AHQ 28.340

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Date: Wed, 17 Mar 1993 00:10:07 GMT  
From: news.service.uci.edu!ttinews!avatar!sorgatz@network.UCSD.EDU  
Subject: Washing Radios?  
To: info-hams@ucsd.edu

In article <9303162320.AA05421@batdd6.batdd1.pica.army.mil> klaudon@pica.army.mil  
writes:

>>

>>This is a very interesting question, and I think many folks on the list would  
>>like to hear techniques used by those with experience in restoration. Why  
>>not make your replies to this query to the mailing list?

>>

>>A case in point: I have heard of people running radios in the dishwasher, for  
>>instance, to clean off accumulations of "gunk". Somehow, I have never gotten  
>>up the courage to actually DO it! Is this for real or not?

>>

>In the past there have been numerous postings from experienced restorers  
>which described washing the equipment with soap and water (dishwasher or  
>>manual). I have not yet had a chance to try this on a piece of electronic  
>gear, although I did do this recently with my wife's upright vacuum cleaner.

(cool story about the vacuum cleaner deleted to save bandwidth)

>say that one should think carefully before exposing any equipment or  
>components to water or any other solvent or agent (remember that water is  
>the most universal solvent there is ) in which that equipment was not  
>specifically designed to be operated, or with which it was not specifically  
>designed to be cleaned. Most electronic equipment was designed to be  
>operated in air only (clean, dry air at that - not the humid, corrosive  
>atmosphere we all experience), and to be bathed in the same. I know that's  
>

>Contrary to common knowledge, water (especially pure water) is an extremely  
>aggressive chemical agent. Often, the fastest way to ruin a bare metallic  
>surface, or any other for that matter where the electrical properties of that  
>surface are the ones of interest (like contacts and elements in pots, switches,

>relays, etc.) is to etch the surface with some cleaner (etch here being defined  
>as the removal of some desired surface layer or passivation) and then to  
>deposit a new undesired layer of organic and/or inorganic residue, with  
>electrical properties all its own.

OK, some points to ponder: Avoid washing ANYTHING that is made from paper or cardboard. Avoid washing meters and tuner dials ESPECIALLY ones with painted radium dials! That old radium paint WILL wash off with water and it's actually quite an environmental hazard, not something that should be just washed down the driveway and into the street!

These aside, I can vouch for using Formula 409 household cleaner on old, vintage radios. My R390 and its sideband adapter got this treatment. I removed the meters, the tubes and all the covers. I pumped a generous coating of 409 over the whole mess and waited an hour. Then I pumped another coat on and used a (don't giggle so loud!) toilet brush to agitate the grunge loose. Then I just turned the hose on it and washed it clean. Leaving the units to dry in the sun for the rest of the day. The chassis' were almost perfectly clean! There were a few minor spots that I took some acetone to remove (?) something that was apparently not water soluble. I put the meters and tubes back in, lubed up the gear train in the VFO, applied power and it's been working fine ever since! (this was 5 months ago...) I just did the same to an old Johnson Viking II CW & AM transmitter..it's cooking ok too! I'm planning to try the dishwasher trick with my newly acquired Gonset GSB-100..I'll let you know how it does..

73!

-Avatar-> (aka: Erik K. Sorgatz) KB6LUY +-----+  
TTI(sorgatz@soldev.tti.com)sorgatz@avatar.tti.com \* Think Eco, not EGO! \*  
3100 Ocean Park Blvd. Santa Monica, CA 90405 +-----+  
(OPINIONS EXPRESSED DO NOT REFLECT THE VIEWS OF CITICORP OR ITS MANAGEMENT!)

-----  
Date: 16 Mar 1993 17:01:03 -0800  
From: usc!howland.reston.ans.net!agate!stanford.edu!morrow.stanford.edu!  
morrow.stanford.edu!not-for-mail@network.UCSD.EDU  
Subject: Washing Radios?  
To: info-hams@ucsd.edu

Folks,

I carefully took my Drake mic and my Kenwood mic apart to protect the electronics, then place them in the dishwasher with the other dishes. I added the usual (lie, lye, SP?) dish soap and the softener.

Well, they went in black and gunky, but came out variegated gray and



clean. So, now we know. The dish washer fades them. It may have been the lye soap that leached out the color, maybe other soap would not cause the color change, but I probably won't try it again.

Steve Eastman, Systems Programmer

Work: Research Libraries Group, Inc.\Stanford University  
1200 Villa Street, Mountain View, CA USA 94041-1100  
VOX: 415-691-2387, FAX: 415-964-0943  
BR.SJE@RLG.BITNET or BR.SJE@RLG.Stanford.Edu

Home: 346 South Van Ness Avenue, San Francisco, CA USA 94103  
VOX: 415-864-1019

"9th Amendment

The enumeration in the Constitution of certain rights shall not be construed to deny or disparage others retained by the people."

-----  
Date: 17 Mar 93 01:52:39 GMT  
From: news-mail-gateway@ucsd.edu  
Subject: What about those FAQing number stations anyway?  
To: info-hams@ucsd.edu

A DL said:

They say "Fuennef" (you see the similarity to "Fuenf"?). But I don't know the reason why, perhaps they think this will make it clearer to understand.

"Fier" and "Funf" can sound very similar in the noise (same number of syllables and a aspriation at the start).

Is this similar to "niner" rather than "nine", or "affirmative" and "negative" for "yes" and "no", or "say again" instead of "repeat" (although to a artillery forward controller "repeat" means the fire another salvo at the same coordinates -- a bit of a difference!).

Kevin Purcell N7WIM / G8UDP  
a-kevinp@microsoft.com

"We conjure the spirits of the computer with our spells"

-----  
Date: Wed, 17 Mar 1993 00:07:20 GMT  
From: usc!sdd.hp.com!col.hp.com!fc.hp.com!paulc@network.UCSD.EDU  
Subject: Yaesu FT-530 vs. TH-28A  
To: info-hams@ucsd.edu

Seth Zirin, N2UCQ (shz@garage.att.com) wrote:

: I'm looking for a dual-band HT and have narrowed the choices to either  
: a Yaesu FT-530 or a Kenwood TH-28A. The FT-530 and accessories are cheaper.  
:  
: Several net-folk have recently mentioned the TH-28A but I've seen no comments  
: on the FT-530. Has anyone seen or used one?  
:

I assume you really mean the TH-78 Kenwood. The TH-28A only  
\*receives\* on 440. It's keypad isn't illuminated, either.

I recently spent an evening comparing my Yaesu 530 to a friend's  
TH-78E, just for fun. There's no clear "winner" (there usually  
isn't), it depends on what you find important. Below are the high  
points of what I saw. It's important to note that I'm much more  
familiar with the 530's operation.

General comments: Features are roughly comparable except the 78 has  
a major added feature of being able to alphabetically label memory  
frequencies. Very nice for remembering what those seldom-used memory  
channels are for (where's that repeater?). The TH-78 is the ultimate  
techno-geek HT; it's even got a games mode (!)

The Yaesu, however, has a feature not found on the Kenwood: battery  
voltage. You can get a constant readout of voltage, unless you're in  
dual band mode where it's a button press away. I find this very  
useful to plan when to charge the battery or to know how much I can  
talk. Nicads don't discharge with a linear remaining capacity vs.  
terminal voltage curve, of course, but with one or two cycles you can  
get a good feel for where you're at. The Kenwood does give you a  
less useful relative battery charge indicator when you transmit (only  
on low power?).

Direct feature comparison:

Duplex operation-

- 530 - Always in duplex mode if both bands on, be careful when  
transmitting on one band and listening on the other; you'll  
retransmit what you're listening to unless you turn down the  
volume. This may be a bug, because it seems to occur even  
if the receive audio is sent to the earphone.
- 78 - Automatic mute of receive audio when transmitting, but can  
program to be in duplex mode like Yaesu's

Both have cross-band repeat functions. Both can receive 2 2 meter  
or 2 70cm signals at once.

Earphone/External Speaker

- 530 - Can select which band goes to earphone independently when

earphone plugged in.

- 78 - Limited selection of speaker/earphone split. It didn't appear to be possible to talk into speaker mic and listen on internal speaker when doing 2 meter only operation, for example.

#### Audio

- 530 - 300 mW at 5% distortion, spec'ed. Seems to have somewhat better audio than Kenwood.
- 78 - 200 mW at 10% distortion, spec'ed.

#### Messages

- 530 - No message sending capability. Okay, maybe a very basic capability using the paging system.
- 78 - Can pre-program and easily send fixed messages, or painfully send random messages. Limited to (I think) 8 chars. My opinion is that this feature may not be very useful, somewhat of a "gee whiz" thing.

#### Paging/CTCSS Squelch/DTMF Squelch

Both radios have essentially identical paging and squelching capabilities. Usability is different, but it wasn't clear which was better.

#### Power Levels

- 530 - 3 on 7.2 volts (2/1.5/.5); 4 on 12 volts (5/3/1.5/.5)  
Rel power indicated when transmitting, but LCD indicator ambiguous when it says "low" ("low" is anything that's not high). 3 watt output would be nice to drive an amplifier and not heat the rig up so much.
- 78 - 3, (5 or 2.5/.5/.02) 20 mW could be nice for close-in work, or maybe hitting close repeaters.

#### Vox

- 530 - Some built in support for Vox (delay, sensitivity). Vox headset is cheaper than Kenwood's, possibly because the support is built in. I'm not sure how useful Vox really is, generally.
- 78 - Vox headset available, no specific built-in support.

#### Memories

- 530 - 41 for each band (82 total).
- 78 - 50 (standard) 250 (expandable). If you use alphanumeric labeling, divide by two. The 78 apparently lets you assign any memory to either the 2m or 70cm side. I'm not sure

of the usability implications of this, good or bad.

Both units seem to store pretty much the entire state of the machine in a memory.

#### Ergonomic stuff

=====

Knobs: Two rotary "step" knobs on the Kenwood are multiplexed between volume and frequency on the two bands via a shift function (E.Chng). The Yaesu has a more conventional 3 knob approach, 1 (pot-like) volume for each band and a step tuning knob which tunes the transmit band. Maybe some people like the Kenwood approach and find it usable; I found it awkward, certainly not as easy to use in a car with one hand. I also like the feel of the non-slip rubber coated Yaesu knobs better.

Buttons: The 530's buttons are good size and easy to press, the 78's, smaller and fussier. The 78 does have some presumably often-used buttons laid out in easy reach of your left thumb, but not illuminated. Could be nice once you get used to the "feel".

Keypad cover: The 78 has one, the 530 doesn't. Could be useful to avoid accidental button pushing (a real concern with these HTs). Of course, you can always lock the keyboard.

Lighting: Both display and keypad are lit on both HTs. I'd give the edge to Yaesu here. The keypad lighting on the Kenwood was a bit weak. The Yaesu is very bright and clear on both the display and keypad.

Scanning: Similar, but Kenwood has an additional scanning mode which includes the call channel. The Yaesu scans about 2x the speed of the Kenwood.

Intermod/Spurious signal rejection: I'd give the edge to Yaesu on the 2 meter side. I didn't get to check the 440 side out, but I know my 530 is pretty susceptible there. Previous posts have dealt with a possible problem in the 530 on the 440 side that may be worse than what is "normal" for HTs now.

So, there you have it. Hope you HT buyers find this useful. When I was looking, the 530 was about 80 dollars cheaper. I decided that the alpha labeling wasn't worth 80 bucks. Now the price differential is closer to 50 dollars. I like the ergonomics of the 530 and wouldn't

trade although I'm sure one could be happy with either, unless you really want the alpha labeling (get the TH-78), or DON'T like the spurious signal problems (don't get either one).

-Paul Christofanelli, KG0CZ

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Date: Tue, 16 Mar 93 18:03:04 GMT  
From: usc!howland.reston.ans.net!gatech!destroyer!cs.ubc.ca!unixg.ubc.ca!  
kakwa.ucs.ualberta.ca!ersys!adec23!mark@network.UCSD.EDU  
To: info-hams@ucsd.edu

References <103360159@hpfco.FC.HP.COM>, <1993Mar13.191255.8724@n8emr.cmhnet.org>,  
<1o2mi5INN8pe@mojo.eng.umd.edu>  
Subject : Re: DESPERATE...NEED TO KNOW FACTS CONCERNING LEGALITY

chuck@eng.umd.edu (Chuck Harris - WA3UQV) writes:

>Gary, you need to loosen up your imagination a little bit. Suppose one wanted  
>to use their fancy 2m HT as the basis of a 1296MHz rig. They could connect  
>the 2m HT to a transverter that would translate its inputs and outputs to/from  
>2m to the 1296MHz band. In an application of this sort, the user would want as  
>large a transmit range from the HT as is possible. Nothing immoral about this  
>in your philosophy is there?

Yes, when the owner of the HT has no intentions of making or purchasing a  
1.3G transverter ... Who in is right mind would go to the trouble of making  
or purchasing a 1.3G transverter and use a chintzy FM HT as the signal source  
really boggles the mind ...

Try something a bit more reasonable Chuck ... :-}

Ciao, 73 de vE6MGS/Mark -sk-

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End of Info-Hams Digest V93 #332  
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